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Remarks

Claim Objections

The applicant has replaced Claim 1 with Claim 16 and made the necessary changes as detailed in the claim objections as recommended by the examiner. The expression "network" now reads "cable network" and the expression "the Cable Modem Termination System" now reads "a Cable Modem Termination System."

Claim Rejections - 35 USC § 112

Rejection of Claim 10 is overcome

The applicant has replaced Claim 10 with Claim 22 and added more detail as to what is included by the term "repeats". The claim now reads "*The method of claim 16 wherein, the method repeats the process continuously during the measurement time period.*" The expression "*measurement time period*" has also been included in Claim 16 to provide an antecedent basis.

Claim Rejections – 35 USC § 102

The Rejection Of Claims 1- 15 on Umeuchi et al. Is Overcome

The O.A. rejected Claims 1 – 15 on Umeuchi et al. Claim 1 has been replaced by Claim 16 to define patentablity over this reference. Applicant requests reconsideration of this rejection, as now applicable to claim 16 for the following reasons:

The novel features of Claim 16 produce new and unexpected results and function and hence are unobvious and patentable under this reference.

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The Reference and Differences Of The Present Invention Thereover

Umeuchi discloses a novel data transmission system using Asynchronous Transfer Mode (ATM). The objective of this invention is to improve the efficiency of data transmission over an ATM system. *No attempt is made in this system to determine the measurement performance of the system and the location of errors, but rather to improve data transmission efficiency.*

The Present Invention discloses a novel system for measuring the service quality on the upstream of a cable modem service. The objective of this invention is to determine in a measurement device the number of packets that have been lost in the upstream and downstream paths between the cable modem and the cable modem termination system. *No attempt is made to provide a system of transmission or to improve the efficiency of any transmission system.*

While the invention disclosed in Umeuchi is very different in nature then the invention disclosed in this application, the applicant concedes that it is possible that the breath of the claims could potentially cause a prior art conflict. It is not the intention of the applicant to read on claims of inventions clearly outside the scope of this invention. The applicant has therefore modified the claims based on the recommendations of the examiner to overcome the issues related to Umeuchi.

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Comments on Changes to Claims

Claims 1 to 15 have been cancelled and replaced by new Claims 16 to 28

Claim 16 (Was Claim 1) has been narrowed to better define the measurement system disclosed in this invention as per the recommendations of the examiner both in terms of the office action recommendations and informal telephone discussions.

The examiner stated in the office action that the feature "to determine the location of where the errors may have occurred", must be included in claims for patentability. To meet this requirement, claim 16 now includes the phrase, *"Determining if any of the IP test packets were lost in the upstream or downstream paths, wherein the determining of the downstream path is based on the IP test packets received with errors, and the determining of the upstream path is based on the IP test packets not received."* It should be noted that any errors cause packets to be lost so the term errors is not used in the claim, but rather the more correct phrase, "packets have been lost."

The examiner stated in the office action that the following features should be included in the claims for patentability. "to determine in a measurement device the number of packets that have been lost in the upstream and downstream path between the cable modem and the cable modem termination system. Since normal pings cannot distinguish between packets lost in the upstream or downstream direction, the present invention allows the tester to distinguish between test packets lost in the upstream or downstream." To meet these requirements the following changes/additions have been made:

What was claim 2 has now been combined into claim 16 and includes additional clarification. Claim 16 now includes the phrase *"Determining over a*

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measurement time period, performance test results of the upstream or downstream paths, based on the number of the IP test packets transmitted from the tester through the cable network to the Cable Modem Termination System compared to the number of IP test packets received at the tester with errors and furthermore, based on the number of the IP test packets transmitted from the tester through the cable network to the Cable Modem Termination System compared to the number of IP test packets received at the tester without errors. "

So that the claims make reference to the fact that ping packets, or more correctly, packets with instructions to return the packet back, are being used in this invention, Claim 16 now includes the phrase, *"Transmitting from a tester, Internet Protocol (IP) test packets through a cable network, to a Cable Modem Termination System, wherein the IP test packets contain instructions to return the IP test packets back to the tester."*

So that the claims make reference to the feature of the ability to distinguish between packets lost in the upstream and downstream direction. As mentioned earlier, Claim 16 now includes the phrase *"Determining if any of the IP test packets were lost in the upstream or downstream paths, wherein the determining of the downstream path is based on the IP test packets received with errors, and the determining of the upstream path is based on the IP test packets not received."*

What were Claims 5, 8 and 15 have been deleted since they were made redundant by changes to Claim 16.

Claims 17 to 26 (Was Claims 3, 4, 6, 7, 9, 10, 11, 12, 13, 14) have been changed to provide proper antecedent basis with Claim 16.

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Claims 27 and 28 have been added in order to claim a method that was eliminated by the narrowing of the terminology of claim 16, but is covered in the specification. Paragraph 24 of the specification has a sentence that reads: *"It is preferable to address the packets to the CMTS 10 however the addresser 54 may address the packet to other destinations deeper in the network."*

Claim 27 covers the method of addressing the test packet to other destinations deeper in the network past the CMTS. This does not interfere with the method in Claim 16 because the tester always transmits the test packet to the CMTS as in the first step of Claim 16, but in this method the test packet has a address destination other then the CMTS. No address was previously specified in Claim 16.

Claim 28 covers what happens to the test packet when the CMTS transmits the error free packet in step 2 of Claim 16. Since the destination of the test packet is other then the CMTS as in Claim 27, and the test packet contains instructions to return the packet back to the tester, the CMTS will then send the test packet to the tester via this destination's address. This also does not interfere with the steps in Claim 16 since the CMTS still transmits the packet to the tester as stated in the second step, but instead of directly as could be implied in Claim 16, a clarification is made in Claim 28 that the test packet is transmitted to the tester via another destination, based on the address in Claim 27.

The Novel Features of Claim 16 Produce New and Unexpected Results and hence are Unobvious and Patentable under This Reference

The applicant submits that the novel features of Claim 16 are also unobvious and hence patentable under § 102 since they produce new and unexpected results over Umeuchi.

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These new and unexpected results are the ability of the applicants system to determine if packets have been lost in the upstream or downstream portions of the cable network and further make a measurement from this data. *No attempt is made by Umeuchi to determine the measurement performance of the system and the location of where packets are lost.*

The Dependent Claims Are Patentable Over Umeuchi

Claims 17 – 28 incorporate all the subject matter of revised Claim 16, which makes them patentable over the reference.

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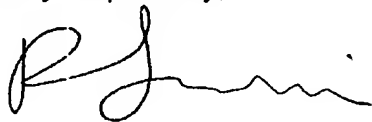EXPEDITED PROCEDURE
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Conclusion

For all of the above reasons, applicant submits that the specification and claims are now in proper form, and that the claims all define patentably over the prior art. Therefore the applicant submits that this application is now in condition for allowance, which action is respectfully solicited.

Conditional Request For Constructive Assistance

Applicant has amended the specification and claims of this application so they are proper, definite and define novel structure which is also unobvious. If, for any reason this application is not believed to be in full condition for allowance, applicant respectfully requests the constructive assistance and suggestions of the Examiner pursuant to M.P.E.P § 2173.02 and § 707.07(j) in order that the undersigned can place this application in allowable condition as soon as possible and without the need for further proceedings.

Very respectfully,

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